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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,283	05/18/2007	Atsushi Saito	056205.58068US	6950

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EXAMINER

LUO, DAVID S

ART UNIT	PAPER NUMBER
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2837

MAIL DATE	DELIVERY MODE
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01/16/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,283	SAITO ET AL.	
	Examiner	Art Unit	
	DAVID S. LUO	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/03/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 2-8 and 12-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :07/25/2006, 09/22/2006, 05/18/2007, 11/14/2008.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 10, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 6,450,275 to Gabriel.

As to claim 1, Gabriel teaches a semiconductor device (Gabriel fig. 2: “68 – DC/DC Converter” and “66 – Electric Drive System”) including a cooling system for controlling temperature (Gabriel fig. 2: “50 – Control Unit” which is used to control the cooling temperatures of different parts of a vehicle including the DC/DC converter and DC/AC inverter) of a refrigerant (Gabriel fig. 2: “system coolant”) through a heating section (Gabriel fig. 2: “68 – DC/DC Converter” and “66 – Electric Drive System” are semiconductor devices and they generate heat during operation and) and a radiator (Gabriel fig. 2: “54 – radiator 1” and “56 – radiator 2”, said semiconductor device being connected to and cooled by said cooling system (Gabriel col. 2: lines 28 – 33), wherein a variation width of temperature controlled by said cooling system through said heating section and said radiator is smaller than a temperature variation of the refrigerant caused by variations in operating conditions of said semiconductor device (Gabriel col. 2: lines 17-43 and col. 4: lines 45-51 where a method is taught to control vehicle component [including semiconductor devices] temperature below the threshold

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temperature to ensure component performance and heat tolerance).

As to claim 10, Gabriel teaches a vehicular cooling system installed in a vehicle (Gabriel fig. 2)comprising an internal combustion engine (Gabriel fig. 2: “64 – internal combustion engine” and a motor (Gabriel fig. 1: “24- generator motor”), said motor being controlled by a power conversion unit (Gabriel fig. 2: “66 – electric drive system”), said vehicular cooling system comprising: a cooling unit for cooling a refrigerant (Gabriel fig. 2: “62—pump1”, “60 – pump2”, “54 – radiator 1” and “56 – radiator 2” which are the components of the cooling unit); and a circulator for circulating the refrigerant cooled by said cooling unit, said cooling system operating such that the refrigerant cooled by said cooling unit is circulated by said circulator to cool said power conversion unit by the circulated refrigerant, said internal combustion engine or both said internal combustion engine and said motor are cooled by the refrigerant which has been used to cool said power conversion unit, and the refrigerant having been used to cool said internal combustion engine or both said internal combustion engine and said motor is cooled by said cooling unit (Gabriel col. 3: lines 50 – col. 4: line 40 where a method is taught to cool the internal combustion engine and the semiconductor components). The cooling system being constituted such that a variation width of refrigerant temperature controlled through said internal combustion engine and said cooling unit is smaller than a temperature variation of the refrigerant depending on variations in operating conditions of said power conversion unit (Gabriel col. 3: lines 56-65 where a method is taught to have two separate closed loop cooling systems which allow the semiconductor electronic components have lower cooling temperature to meet their operating requirement than that of the internal combustion engine).

As to claim 11, it is rejected as the same reason as claim 10.

Allowable Subject Matter

3. Claims 2-8, 12-14 are objected to as being dependent upon the rejected base claims 1 and 11, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
5. Applicant's arguments filed on 12/03/2008 with respect to claims 1, 10, 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Luo whose telephone number is (571)270-5251. The examiner can normally be reached on M-F 9AM-6PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on (571)272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from

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a USPTO Customer Service Representative or access to the automated information system, call
800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David Luo

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/BENTSU RO/

Primary Examiner, Art Unit 2837